NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
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STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF CORRECTIVE ACTIONS
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December 14, 2007

Mr. Kevin Lyng
DCI Management Group, Ltd.
Chief Executive Officer
11811 N. Tatum Blvd.
Phoenix, AZ 85028

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7005 0390 0002 0502 3242

Subject: **Groundwater Sampling Frequency**
Request for Additional Groundwater Characterization

Facility: Al Phillips the Cleaner (former)
3661 S. Maryland Pkwy
Las Vegas, NV

NDEP ID#: **H-000086**

Dear Mr. Lyng,

As discussed during our meeting in Carson City on November 30, 2007, the Nevada Division of Environmental Protection (NDEP) has reviewed the analytical data collected for the Maryland Square Al Phillips the Cleaners and included in the *Report for Installation of Downgradient Groundwater Monitoring Wells* (November 26, 2007) and the *3rd Quarter 2007 Groundwater Sampling Report* (December 6, 2007). These reports were submitted to NDEP and prepared by URS on behalf of Al Phillips the Cleaner and DCI Management, Ltd. (DCI).

As part of this review, NDEP evaluated the range of concentrations and concentration trends for tetrachloroethylene (PCE) in groundwater samples collected from site monitoring wells. Based on this evaluation, NDEP has determined whether a reduction in sampling frequency for specific wells is warranted.

This letter summarizes the results of the NDEP's evaluation and NDEP's recommended revisions to the groundwater monitoring program for the site. This letter also requires DCI to (1) continue providing quarterly groundwater monitoring reports in accordance with the schedule included below; and (2) submit a work plan addendum for additional groundwater characterization for NDEP review and approval.

Mann-Kendall Test for PCE Groundwater Concentration Trend

For the wells in which PCE was generally detected, the Mann-Kendall test for trend was applied to the sample data. Results of the trend test are included as **Attachment 1** to this letter. All data through June, 2007 were used as input data for the statistical testing. Data collected in September 2007 using a different sampling method (low-flow sampling) were excluded from the statistical testing to avoid confounding the test results.

Results of the Mann-Kendall test (**Attachment 1**) indicate that the plume appears stable; that is, there was no trend of increasing or decreasing concentration seen in most of the monitoring wells. Two monitoring wells showed a decreasing trend (at the 90% confidence level); none showed an increasing trend in this analysis. These results differ somewhat from the previous trend analysis conducted by the NDEP (NDEP letter of March 1, 2007), and may reflect sampling variability.

New Monitoring Wells

One boring and three additional monitoring wells were installed in October, 2007. Of these, two had low-level detections of PCE and should be scheduled for semi-annual monitoring (Note that this schedule is a change from the directive stated in NDEP's letter of October 10, 2007). New well MW-30 lies approximately 3,900 feet due east of the source area and contained 74 µg/L of PCE; this well should be sampled quarterly.

Recommended Revisions to Monitoring Well Sampling Frequency Based on NDEP Data Review

Based on the data evaluation, the NDEP recommends finds the following:

1. Well MW-11, which contains a trace of weathered gasoline and BTEX compounds from an old, unrelated gasoline spill, no longer need be sampled or have water levels measured
2. Wells that generally yielded samples in which PCE was not detected are recommended for annual sampling and analysis.
3. Wells with low-level detections of PCE and no trend of increasing concentration are recommended for annual sampling and analysis.
4. Wells outside of the neighborhood, with notable concentrations, but no trend of increasing concentrations, are recommended for semi-annual sampling and analysis.
5. Two of the three new wells installed in October, 2007 have low levels of PCE and are recommended for semi-annual sampling and analysis.
6. Wells within the neighborhood that contain significant concentrations of PCE and new well MW-30 will continue to be sampled quarterly
7. A permanent monitoring well must be installed at the Cherokee and Spencer location of the temporary well, based on the datum of 550 µg/L PCE in the grab sample collected from the temporary well.

8. Another boring must be drilled approximately 100 feet north of the Cherokee and Spencer location, in order to bound the edge of the plume. A grab sample analyzed for PCE on quick-turnaround may be used to evaluate whether the plume has been bounded.
9. Based on results of the groundwater samples from 7. and 8. above, another bounding boring may be required on Cochise Lane, east of the golf course green.

The following table indicates the recommended sampling frequency for site monitoring wells. If DCI would like to request a different sampling frequency, provide the rationale for the recommended changes to NDEP by **January 14, 2007**. If DCI agrees with the recommended frequency, DCI shall begin implementation of the first annual sampling event during the first quarter of 2007. Semi-annual samples are to be collected in the 2nd and 4th quarters (June and December).

Sampling Frequency	**Monitoring Wells**
Discontinue	MW-11
Annual	MW-3, MW-7, MW-8, MW-10, MW-12, MW-15, MW-16, MW-21, MW-22, MW-24
Semi-annual	MW-1, MW-2, MW-4, MW-5, MW-6, MW-9, MW-13, MW-14, MW-17, MW-28, MW-29
Quarterly	MW-18, MW-19, MW-20, MW-23, MW-25, MW-26, MW-27, MW-30

Water levels should continue to be measured quarterly in all wells, except well MW-11, which can be excluded from further monitoring. A head map showing the groundwater gradients across the site (using data for all wells and borings) should be submitted in the quarterly report, and updated and re-submitted upon receipt of information from new borings/wells.

The NDEP requires that the fourth quarter, 2007 monitoring report be submitted by January 30, 2008. Subsequent quarterly monitoring reports should be submitted in accordance with the following schedule:

Quarter	**Report Due Date**
January – March	April 15
April – June	July 15
July – September	October 15
October – December	January 30

Workplan for Additional Groundwater Characterization

Because the lateral extent of PCE has not been defined to the north of wells MW-26, MW-27, and MW-30 and to the east of MW-30, DCI must submit a work plan by **January 30, 2008** to install a permanent monitoring well at the Cherokee and Spencer location of the temporary well drilled in October, 2007. The work plan may be a letter addendum to the September, 2007 work plan for monitoring well installation. To bound the northern edge of the plume, the work plan should also propose to install a boring must be drilled approximately 100 feet north of the Cherokee and Spencer location, and a grab sample analyzed for PCE on quick-turnaround basis.

This datum will be used to evaluate whether the plume has been bounded or whether another boring is needed. The location of all borings and wells must be surveyed.

Based on results of the groundwater samples from 7. and 8. above, another bounding boring may be required on Cochise Lane, east of the golf course green. The location of any additional borings/wells will depend on the results seen for each new boring/well.

If you have any comments or questions please contact the NDEP Case Officer, Mary Siders at (775) 687-9496 or email msiders@ndep.nv.gov.

Sincerely,

Mary A. Siders, Ph.D.
Bureau of Corrective Actions
NDEP Carson City

cc: w/enc

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Results of Mann-Kendall Test for Trend. **Data through June 2007.** Switched to low-flow sampling in September 2007, which radically changed some results, hence this table through June 2007 sampling only.

Well ID	Trend at 90% Confidence?	Number of Samples	Sampling Frequency Recommended	Monitoring Well Area	Range of Concentrations
MW-1	**Decreasing**	11	S	Onsite	420 – 3,500 µg/L
MW-2	No	10	S	West side of mall	1,300 – 3,000 µg/L
MW-3			A	South of plume, on west side of mall	ND – 98 µg/L
MW-4			S	Onsite, south of plume	14 – 220 µg/L
MW-5	No	10	S	Onsite, south of plume	67 – 550 µg/L
MW-6	No	11	S	Onsite	530 – 2,400 µg/L
MW-7			A	Onsite, upgradient, north of plume	ND – 11 µg/L
MW-8			A	Onsite, upgradient	2.6 – 5.6 µg/L
MW-9			S	Deeper well	9.2 – 670 µg/L
MW-10			A	South of mall	ND – 15 µ/L
MW-11			Discontinue	NS (old TPH in well)	TPH product in well
MW-12			A	Onsite, upgradient	ND – 14 µg/L
MW-13	No	12	S	West side of mall, in plume centerline	2,000 – 5,310 µg/L
MW-14	No	10	S	Onsite, in plume centerline	1,700 – 3,500 µg/L
MW-15			A	North of plume, on west side of mall	ND – 5.2 µg/L
MW-16			A	East of mall, below detection limits	ND
MW-17	No	6	S	Onsite	300 – 1,300 µg/L
MW-18	**Decreasing**	**9**	**Q**	**Westernmost well in neighborhood**	**930 – 2,400 µg/L**
MW-19	**No**	**9**	**Q**	**East mall parking lot**	**510 – 1,300 µg/L**
MW-20	**No**	**10**	**Q**	**East mall parking lot**	**290 – 2,500 µg/L**
MW-21	No	9	A	North edge of plume, east side of mall	16 – 55 µg/L
MW-22			A	Neighborhood, north of plume, NDs	ND – 1 µg/L
MW-23	**No**	**8**	**Q**	**Seneca Circle, in neighborhood**	**750 – 2,100 µg/L**
MW-24			A	Ottawa Drive, south of Seneca Circle	ND – 6.7 µg/L
MW-25	**No**	**9**	**Q**	**Seneca Lane**	**560 – 1,300 µg/L**
MW-26	**No**	**6**	**Q**	**Seneca Lane**	**620 – 1,100 µg/L**
MW-27	**No**	**6**	**Q**	**Ottawa Circle, next to Golf Course**	**160 – 380 µg/L**
MW-28	na	1	S	Ottawa Dr & Ottawa Circle	2.6 µg/L
MW-29	na	1	S	East end of Ottawa Dr	2.5 µg/L
MW-30	**na**	**1**	**Q**	**Geronimo Way cul-de-sac**	**74 µg/L**
TW	na	1	na	Cherokee & Spencer	550 µg/L

Notes: Results from Mann-Kendall test for trend at 90% and 80% confidence levels.
Red font = quarterly groundwater sampling, Blue font = semi-annual groundwater sampling, Olive font = annual sampling
Purple font = discontinue sampling
TW = temporary well